UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/809,526	03/15/2001	Ilija Hadzic	1	4517

			EXAMINER
22046	7590	12/28/2005	CHO, HONG SOL

LUCENT TECHNOLOGIES INC.
DOCKET ADMINISTRATOR
101 CRAWFORDS CORNER ROAD - ROOM 3J-219
HOLMDEL, NJ 07733

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/809,526	HADZIC, IIIJA
	Examiner	Art Unit	
	Hong Cho	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>16 November 2005</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-38</u> is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-8, 15, 16, 18-21, 23, 28-30 and 33-38</u> is/are rejected.
7)☒ Claim(s) <u>9-14, 17, 22, 24-27, 31 and 32</u> is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____ .

DETAILED ACTION

Response to Amendment

1.   This office action is in response to the amendment filed on 11/16/2005. Claims 1-38 are

pending in the instant application.

2.   Applicant's request for reconsideration of the finality of the rejection of the last Office

action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 112 Second paragraph

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming
> the subject matter which the applicant regards as his invention.

4.   Claims 15-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

Re claim 15, it recites the limitation "said ports of said metropolitan area Ethernet

network". There is insufficient antecedent basis for this limitation in the claim.

Claims 16-27 are rejected because they depend on claim 15.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth
in section 102 of this title, if the differences between the subject matter sought to be patented and the prior
art are such that the subject matter as a whole would have been obvious at the time the invention was made
to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be
negatived by the manner in which the invention was made.

6.   Claims 1, 3-8, 28-30, and 33-38 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Gaddis et al (US 5815501), hereinafter referred to as Gaddis.

Re claims 1, 28 and 29, Gaddis discloses encapsulating contents of a first Ethernet

packet received at a port of a switch of an ATM network in at least one encapsulating

ATM cell that is to traverse said ATM network (figure 1; column 7, lines 39-42). Gaddis

discloses assigning virtual identifier, which is an address of a switch port, as a source

address of an encapsulating packet (*assigning the source address of at least one*

encapsulating Ethernet packet to be the address of said port at which said packet was

received, column 8, lines 20-24). Gaddis fails to disclose an Ethernet packet to be

embedded into encapsulating Ethernet packet in Ethernet network. It would have been

obvious to one having ordinary skill in the art at the time the invention was made to

modify Gaddis to perform encapsulating of an Ethernet packet into another Ethernet

packet in an Ethernet network. The motivation is to perform encapsulation function in

Ethernet network for improved packet throughput than ATM network by putting header

data to each encapsulated Ethernet packets that are much larger than ATM cells.

Re claim 3, Gaddis discloses encapsulating contents of a first Ethernet packet

received at a port of a switch of an ATM network (figure 5).

Re claims 4 and 5, Gaddis discloses encapsulating and assigning steps performed

in portal switch at an interface between ATM network, which serves a plurality of entities

and Ethernet network, which serves only a single one of entities (figures 7 and 12).

Gaddis fails to disclose encapsulating and assigning steps performed in metropolitan area

Ethernet network. It would have been obvious to one having ordinary skill in the art at

the time the invention was made to modify Gaddis to perform encapsulating of an

Ethernet packet into another Ethernet packet in an Ethernet network. The motivation is

to perform encapsulation function in Ethernet network for improved packet throughput

than ATM network by putting header data to each encapsulated Ethernet packets that are

much larger than ATM cells.

Re claims 6 and 7, Gaddis discloses assigning virtual identifier, which is an

address of a switch port, to an encapsulating packet (*assigning the source address of at*

least one encapsulating Ethernet packet to be the address of said port at which said

packet was received, column 8, lines 20-24).

Re claim 8, Gaddis discloses encapsulating contents of a first Ethernet packet ·

received at a port of a switch of an ATM network into several ATM cells (*encapsulating*

step is performed so that a first portion of said first Ethernet packet is encapsulated in at

least one encapsulating Ethernet packet and a second portion of said first Ethernet

packet is encapsulated in at least a second encapsulating Ethernet packet; figure 5).

Gaddis discloses assigning virtual identifier, which is an address of a switch port, as a

source address of an encapsulating packet (*assigning the source address of at least one*

encapsulating Ethernet packet to be the address of said port at which said packet was

received, column 8, lines 20-24). Gaddis fails to disclose an Ethernet packet to be

embedded into encapsulating Ethernet packet in Ethernet network. It would have been

obvious to one having ordinary skill in the art at the time the invention was made to

modify Gaddis to perform encapsulating of an Ethernet packet into another Ethernet

packet in an Ethernet network. The motivation is to perform encapsulation function in

Ethernet network for improved packet throughput than ATM network by putting header

data to each encapsulated Ethernet packets that are much larger than ATM cells.

Re claim 30, Gaddis discloses a network with a plurality of portal switches (*a*

metropolitan area network with a plurality of edge switches, figure 1). Gaddis discloses

a portal switch encapsulating contents of a first Ethernet packet received from one of

Ethernet segments (*an edge switch encapsulating contents of inner packets received from*

one of local area networks in at least one encapsulating Ethernet packet) that is to

traverse a network where at least one switches should be located in to switch ATM cells

(*at least one core switch for switching encapsulating packets,* figure 1). Gaddis fails to

disclose an Ethernet packet to be embedded into encapsulating Ethernet packet in

Ethernet network. It would have been obvious to one having ordinary skill in the art at

the time the invention was made to modify Gaddis to perform encapsulating of an

Ethernet packet into another Ethernet packet in an Ethernet network. The motivation is

to perform encapsulation function in Ethernet network for improved packet throughput

than ATM network by putting header data to each encapsulated Ethernet packets that are

much larger than ATM cells.

Re claims 33 and 34, Gaddis discloses a portal switch receiving encapsulating

packets with source and destination addresses and a portion of data and cyclic

redundancy check (CRC) of an Ethernet packet that was fragmented into ATM cells that

are switched via a network (*an edge switch receiving at least first and second*

encapsulating packets, each of said encapsulating packets containing a portion of data

and/or CRC of a first inner packet that was fragmented into at least first and second

encapsulating packets for transport via said metropolitan area Ethernet network, figure

7) and reassembling said first inner packet using said portions of data and/or cyclic

redundancy check contained within said first and second encapsulating packets (column

7, lines 39-44). Gaddis fails to disclose segmenting and reassembling (SAR) procedure

in Ethernet network. It would have been obvious to one having ordinary skill in the art at

the time the invention was made to modify Gaddis to perform SAR procedure in an

Ethernet network. The motivation is to get the benefit of using the same network type for

easy implementation of SAR procedure.

Re claim 35, Gaddis discloses encapsulating contents of a first Ethernet packet

received at a port of a switch of an ATM network in at least one encapsulating Ethernet

packet that is to traverse said ATM network (figure 1; column 7, lines 39-42). Gaddis

discloses segmenting Ethernet packets into ATM cells to meet requirements of ATM cell

size (figure 5; *the length of first portion is selected*). Gaddis discloses assigning virtual

identifier, which is an address of a switch port, as a source address of an encapsulating

packet (*assigning the source address of at least one encapsulating Ethernet packet to be*

the address of said port at which said packet was received, column 8, lines 20-24).

Gaddis fails to disclose an Ethernet packet to be embedded into encapsulating Ethernet

packet in Ethernet network. It would have been obvious to one having ordinary skill in

the art at the time the invention was made to modify Gaddis to perform encapsulating of

an Ethernet packet into another Ethernet packet in an Ethernet network. The motivation

is to perform encapsulation function in Ethernet network for improved packet throughput

than ATM network by putting header data to each encapsulated Ethernet packets that are

much larger than ATM cells. Gaddis fails to disclose encapsulating a second portion of

inner Ethernet packet into a second encapsulating Ethernet packet when first

encapsulating Ethernet packet would exceed a prescribed Ethernet maximum packet

length if first portion were the entirety of inner Ethernet packet. It would have been

obvious to one having ordinary skill in the art at the time the invention was made to

modify Gaddis to perform packet segmentation in Ethernet network so that packets would

be segmented into smaller packets if encapsulating packet exceeds the maximum packet

length supported and transmitted through a given transmission medium.

Re claim 37, Gaddis discloses assigning a sequence number to each encapsulating

packet (column 8, lines 5-8).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gaddis in view of

Thubert et al (US 6603769), hereinafter referred to as Thubert.

Re claim 2, Gaddis discloses all of the limitations of the base claim, but fails to

disclose contents of first Ethernet packet being the entirety of first Ethernet packet.

Thubert discloses putting an entirety of Ethernet packet into Frame Relay packet (figure

7). It would have been obvious to one having ordinary skill in the art at the time the

invention was made to implement Thubert to perform encapsulating of an Ethernet packet

into another Ethernet packet in an Ethernet network. The motivation is to get the benefit

of using the same network type so that it would increase switch process in performing

encapsulation function.

Claims 15, 16, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Zelig et al (USPUB 20020110087), hereinafter referred to as Zelig.

Re claims 15 and 19, Zelig discloses an access switch with ports connected to

local networks (an edge switch for use in a metropolitan area Ethernet network having

ports adapted to be coupled to at least one local area Ethernet network, figure 1). Zelig

discloses an access switch with one port receiving packets from virtual local area network

(VLAN) (*said edge switch with at least one port for receiving inner Ethernet packets*

from at least one of said local area Ethernet networks and for transmitting inner Ethernet

packets to said at least one of said local area Ethernet networks, figure 1; paragraph

[0052]). Zelig discloses an access switch with one port being one of said ports of

backbone network (figure 1, element 22). Zelig discloses establishing correlation

between ports of an access switch and address of local VLANs (*memory for establishing*

a correspondence association between addresses within said at least one local area

Ethernet network and addresses of said ports in said metropolitan area Ethernet network, figure 1, element 26; paragraph [0052]). Zelig fails to disclose an access switch for use in metropolitan area Ethernet network. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Zelig to perform in metropolitan area Ethernet network (paragraph [0070]) so that an access switch would provide an efficient setup of bi-directional services since Zelig suggests that the principles of his system would be applied to other networks.

Re claim 16, Zelig discloses establishing correlation between ports of an access switch and address of local VLANs (*given an address of a particular one of said addresses within said at least one local area Ethernet network said switch is operable to retrieve said corresponding associated one of said addresses of said ports in said metropolitan area Ethernet network,* paragraph [0052]).

Re claim 18, Zelig discloses using VLAN domain identifier (paragraph [0053]).

Claims 20, 21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zelig et al (USPUB 20020110087), hereinafter referred to as Zelig in view of Gaddis.

Re claims 20 and 21, Zelig discloses all of the limitations of the base claim, but fails to disclose a packet stripper that extracts at least a respective portion of a one of inner packets from at least two different encapsulating packets for transmission to local area Ethernet via a port and an inner packet reassembler that receives portions of said inner packet from packet stripper and reconstructs therefrom one of inner packets. Gaddis discloses a portal switch receiving encapsulating packets with a portion of data of

an Ethernet packet that was fragmented into ATM cells that are switched via a network

and reassembling first inner packet using portions of data contained within first and

second encapsulating packets (column 7, lines 39-44). It would have been obvious to one

having ordinary skill in the art at the time the invention was made to modify Zelig to

perform SAR procedure in an Ethernet network. The motivation is to get the benefit of

using the same network type for easy implementation of SAR in a network so that a

packet would be segmented and reassembled quickly.

Re claim 23, Zelig discloses all of the limitations of the base claim, but fails to

disclose an encapsulator that embeds each of received inner packets as a payload in at

least one encapsulating packet and places the address of at least one port within the

source address field of at least one encapsulating packet. Gaddis discloses encapsulating

contents of a first Ethernet packet received at a port of a switch of an ATM network in at

least one encapsulating Ethernet packet that is to traverse said ATM network (figure 1;

column 7, lines 39-42) and assigning virtual identifier, which is an address of a switch

port, as a source address of an encapsulating packet (*assigning the source address of at

least one encapsulating Ethernet packet to be the address of said port at which said

packet was received,* column 8, lines 20-24). Gaddis fails to disclose an Ethernet packet

to be embedded into encapsulating Ethernet packet in Ethernet network. It would have

been obvious to one having ordinary skill in the art at the time the invention was made to

modify Gaddis to perform encapsulating of an Ethernet packet into another Ethernet

packet in an Ethernet network. The motivation is to perform encapsulation function in

Ethernet network for improved packet throughput than ATM network by putting header

data to each encapsulated Ethernet packets that are much larger than ATM cells.

Allowable Subject Matter

7.   Claims 9-14, 17, 22, and 24-27 are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

8.   Claims 31 and 32 are allowable.

        Claims 9, 10, and 31 are allowable over the prior art of record since the cited

references taken individually or in combination fails to particularly disclose assigning a

destination address to an encapsulating packet as a function between a destination address

of first Ethernet packet and a port of metropolitan area Ethernet network.

        Claims 11, 12 and 14 are allowable over the prior art of record since the cited

references taken individually or in combination fails to particularly disclose assigning

one encapsulating packet as either a broadcast packet or a multicast packet.

        Claim 17 is allowable over the prior art of record since the cited references taken

individually or in combination fails to particularly disclose a memory associating a time

stamp with each address within local area Ethernet network and address of ports in

metropolitan area Ethernet network.

Claim 22 is allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose <u>a memory writer for forming</u> <u>an association between a received encapsulating packet's source address and a source</u> <u>address of an inner packet within encapsulating packet.</u>

Claims 24-27 are allowable over the prior art of record since the cited references taken individually or in combination fails to particularly disclose <u>an encapsulator further</u> <u>places within the destination address field of at least one encapsulating packet an address</u> <u>of metropolitan area Ethernet network that is associated within memory with a</u> <u>destination address of inner packet.</u>

Response to Arguments

9.   Applicant's arguments with respect to claims 1-38 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
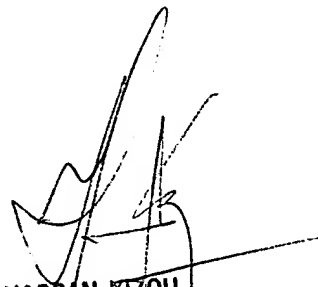
- US Patent (6735198) to Edsall et al
- US Patent (5790541) to Patrick et al

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Hong Cho whose telephone number is 571-272-3087.

The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-3088.

        Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

hc
Hong Cho
Patent Examiner
12/23/2005

HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600